Comments From Remedium / MWH

DRAFT – FOR DISCUSSION ONLY

LIBBY SUPERFUND SITE
OPERABLE UNIT 3
PHASE III SAP ATTACHMENT A

SCRIPT FOR COMPOSITE ABS SCENARIO

Each ABS sample will span a time period of 180 minutes. Each ABS sample will be a composite of activities that are considered to be representative of activities that might be performed by recreational visitors to OU3. Two participants will participate in each ABS event. Table A-1 summarizes the activities and the timing. A more detailed description is provided below.

Activities

1. ATV Riding
The first activity to be performed is ATV riding. [insert details on type/size of ATVs to be used]. The total duration is 40 minutes. Riding should occur on trails (if present), and should also occur off-trail if the terrain is suitable. Speed should be about 3-10 mph, depending on terrain and safety considerations. For the first 20 minutes, Person 1 should be in the lead position, with Person 2 following at a safe distance (about 5-10 meters, depending on terrain). After 20 minutes, Person 2 should take the lead, and Person 1 should follow at a safe distance.

Comment: There are very few places outside the mine-disturbed area where off-road ATV travel is possible. As discussed during the February 5, 2009 meeting with EPA in Denver, the terrain is generally very steep and heavily forested; most ATV travel will be confined to USFS roads and logging roads. We propose to use two Polaris Ranger 500® 4WD "side by side" vehicles for this activity.

2. Hiking
The second activity to be performed is hiking. The total duration is 40 minutes. Hiking should occur on trails (if present), and should also occur off-trail if the terrain is suitable. For the first 20 minutes, Person 1 should be in the lead position, with Person 2 following at a distance of about 3-5 meters, depending on terrain. After 20 minutes, Person 2 should take the lead, and Person 1 should follow.

3. Sawing and Stacking Wood
The third activity is sawing and stacking firewood. Each participant will perform each activity for 20 minutes (40 minutes total). Initially, Person 1 will perform the sawing activity, while Person 2 collects and stacks the cut wood. After 20 minutes, the roles are reversed.

Sawing will be performed using a chainsaw [add details on size and horsepower]. A standing tree [should we focus on downed trees?] [add details on size of tree to cut] shall be selected and felled. Small branches (less than 4 inches) shall be cut off and piled to the side. The remaining branches and trunk will be sawed into lengths of about 16 inches and stacked.

Comment: As discussed during the meeting in Denver, "dead and down" trees with bark and of diameter greater than four inches will be selected for cutting. We propose to use a minimum 14-inch gas-powered chainsaw with displacement of 32 cc or greater.

4. Raking/Digging:
The fourth activity is raking and digging. This is intended to simulate activities that bring a person into direct contact with duff and soil (e.g., clearing a location for a tent, preparing a fire area).

For raking, each participant will use a metal leaf rake to rake a circular area with a radius of about 10 meters. Both individuals will be raking at the same time, with each individual raking one-half of the circle. The participants will rake all duff and other surficial debris outwards towards the margins, leaving a cleared area of about 300 square meters. Time spent raking shall be 20 minutes.

Comment: As observed during Phase I sampling, the thickness of the duff layer in the study area ranges from three to five inches. Assuming an average duff layer thickness of four inches, an area of 10-meter radius contains 35 cubic yards of duff, far more than two people can rake in 20 minutes. As discussed during the February 5, 2009 meeting, the time spent raking is more important than the area or volume of duff raked. Therefore, we suggest that this activity be performed by two people for 20 minutes each, regardless of the area cleared.

For digging, each participant shall use a small camp shovel to dig a fire pit in the center of the area cleared by raking. Both individuals shall be digging at the same time. The fire pit shall be about 3 feet in diameter, and about 6 inches deep, depending on soil characteristics. Time spent digging will be 10 minutes.

Comment: As observed during Phase I sampling, there are many areas with bedrock directly beneath the duff layer, where it would be impossible to dig a six-inch-deep fire pit by hand. In such areas, we suggest that two people each spend ten minutes scraping the mineral soil layer and building a rock fire ring at the fire pit area.

5. Building and Sitting Near a Campfire
The final activity is building and sitting near a campfire. This fire will be built in the fire pit created as described for Activity 4, using the wood cut during Activity 3. Both individuals should participate in building and lighting the fire. Once the fire is lit, both individuals should sit

or stand near the fire, simulating the activities of recreational campers. Each individual should move about the fire, and should spend about 10 minutes in the downwind direction from the fire. [note...this could result in a bunch of soot on the filter. If so, maybe we should make ashing standard]

Comment: As discussed during the meeting in Denver, it is neither realistic nor healthful for people to remain directly downwind of a campfire. We propose that this activity be performed by two people standing and walking around the fire ring for 30 minutes.

After a total of 30 minutes, the fire will be thoroughly extinguished with water and buried by covering with the soil dug from the fire pit. Extreme care must be used to ensure the fire is completely and totally extinguished. [we should get USFS guidance on this]

Equipment decontamination. All non-disposable equipment, including ATVs, saws, rakes and shovels used during the investigation will be decontaminated between each ABS event using a pressurized water to remove accumulated material.

Health and Safety. Each person who participates in ABS sampling shall wear sufficient personal protective equipment to ensure that unacceptable exposure to asbestos does not occur. In addition, all ABS related activities must be performed in fashion that ensures the safety of both individuals in the ABS team.

Other Comments

Field Visit: During the February 5, 2009 meeting in Denver with EPA Region 8 it was decided that EPA and/or representatives will travel to the study area as soon as possible after snowmelt (late May or early June?) to inspect field conditions in the study area. Prior to this field visit, Remedium will have selected a minimum of 20 locations and five alternate locations where the proposed ABS script can be performed safely, while still meeting the study requirements. We anticipate that MWH will conduct the tour of the study area and proposed ABS locations.

Pumps for ABS: Remedium is working with pump suppliers and air sampling consultants to find portable air sampling pumps capable of sustaining a flow of eight liters per minute (LPM) for three hours through the filters specified in the draft SAP. According to our contacts, there are no "off the shelf" portable pumps capable of pumping 8 LPM through a cowled 25-mm diameter MCE filter with 0.8-micron pore size. There are larger-capacity pumps available, but the smallest weigh 20 to 30 pounds and require a deep-cycle marine battery (approximately 50 pounds) to power them. Such a system would not be practical for ABS performed in Level C PPE, on the steep terrain of the study area (particularly during the summer months, when temperatures in the area are often over 100°F). There are several portable pump options available if a cassette of larger diameter (e.g., 37 mm)

can be used, if two smaller pumps can be operated in parallel, or if a lower pumping rate can be used.

Given the limitations of currently available pump technology, Remedium requests that EPA revisit the assumptions and requirements of the ABS portion of the Phase III SAP and the SOP for the sampling of asbestos fibers in air (EPA-LIBBY-01) to determine what, if any, modifications would be acceptable. For example, references to AC power and water-pipe grounding suggest that SOP EPA-LIBBY-01 is directed toward stationary air sampling; the SOP may need to be modified to permit mobile outdoor air sampling in the dusty backcountry environment (dust loading and consequent increases in back-pressure have been immediate concerns of each of the experts we've contacted).

TABLE A-1
SUMMARY OF ABS AT OU3

Time (min)		Person	
Start	Stop	No. 1	No. 2
0	20	ATV (lead)	ATV (follow)
20	40	ATV (follow)	ATV (lead)
40	60	Hike (lead)	Hike (follow)
60	80	Hike (follow)	Hike (lead)
80	100	Saw	Pile wood
100	120	Pile wood	Saw
120	140	Rake	Rake
140	150	Dig	Dig
150	180	Build and sit near campfire	